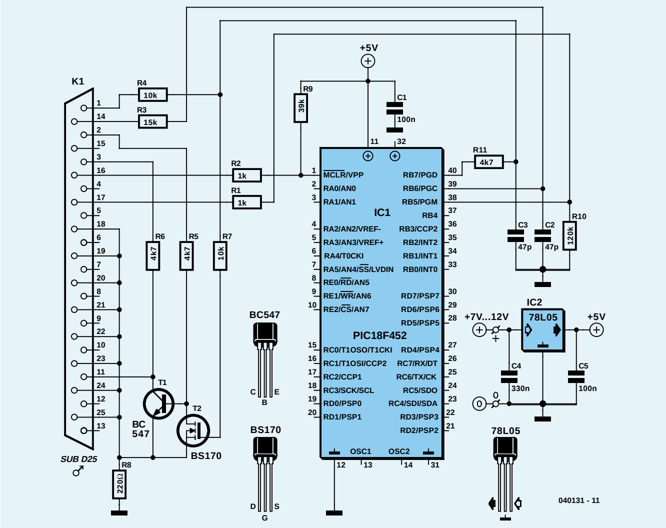

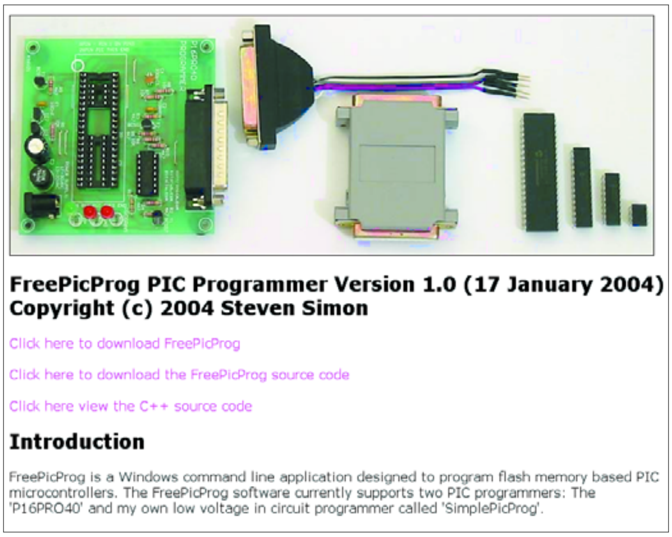

FreePicProg PIC Programmer Version 1.0 (17 January 2004)
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Click here to download FreePicProg

Click here to download the FreePicProg source code

Click here view the C++ source code

Introduction

FreePicProg is a Windows command line application designed to program flash memory based PIC microcontrollers. The FreePicProg software currently supports two PIC programmers: The 'P16PRO40' and my own low voltage in circuit programmer called 'SimplePicProg'.

FreePICProg

cheap 'n easy PIC programming

David Daamen

The PocketPong game found elsewhere in this issue was designed around a PIC18F452 for which, we have to admit, no suitable programmer was ever published in this magazine. Sure, investing in a commercially produced programmer is an option, but making one yourself is cheaper and much more fun, too!

We reckon that's what Steven Simon must have thought when he needed a programmer for one of the newer PIC micros. On his website, Steven describes the software he produced for the purpose — both the executable and the source code files may be downloaded free of charge. The program can work with various hardware variants which are also described on the site. The circuit shown in **Figure 1** is a related item, albeit a very rudimentary one. No LEDs or other frills — just connect & program!

Construction and operation

The circuit consists mainly of passive parts, the majority of them serving to shape and tidy up various switching signals. Of the active parts, the transistors ensure that the edge steepness of the signal found at the BUSY line (pin 11) is improved. That leaves us with voltage regulator IC1, which we take it is so familiar as to defy further description.
The circuit should be easy to build on a small piece of Veroboard. For K1 it is wise to use an angled connector and solder it directly on to the board. The programmer may be plugged directly into the printer port on the PC.
The power supply is uncritical and may be realised using a simple mains adaptor with an output voltage of 7-12 VDC.

Software

The little program called 'fpp.exe' allows a HEX file to be burned into the PIC micro. The software is compatible with all versions of Windows. However, because the printer port is accessed, Windows NT, 2000 and XP do require an extra driver to be installed — in this case, 'DLPortIO' from Scientific Software Tools. Incidentally, only LPT1 (0x378h) is supported.
The hardware may be tested by typing this command line:

```
fpp lvp –t
```

where the 'lvp' option specifies the programmer type. You may also choose 'lvp_fast' which speeds up the programming sequence. It may not work in all cases, though, so first give it a try.
Once the hardware has been recognised, the PIC may be installed with the programmer supply switched off. The actual programming operation is launched with

```
fpp lvp <PIC type> -p
<HEX file>
```

There are also options for reading a PIC device ID, blank checking, erasing, etc. Type 'fpp' only for an overview of all available parameters.

PICs supported

FPP V1.00 supports the following PIC types:

- 12F629
- 16F876, 16F877, 16F628 (-A suffix versions are not supported!)
- 18F252, 18F452

Although the 12F675 is in principle also supported by the software, the hardware shown here is unsuitable for this particular PIC device. For more information, have a look at the web pages covering FPP.

(040131-1)

FPP website:
www.geocities.com/SiliconValley/Hills/1924/freepicprog.html

FPP download from Elektor Electronics:
file # 040131-11,
www.elektor-electronics.co.uk/dl/dl.htm,
select month of publication.

DLPortIO
www.driverlinx.com/DownLoad/DlPortIO.htm